

Shellfish Aquaculture and the CZM Program



Laura McKay



Virginia Coastal Zone
MANAGEMENT PROGRAM



The Virginia CZM Program

What is it?

- All of Virginia's laws and policies that protect Virginia's coastal resources
- Authorized under the federal Coastal Zone Management Act of 1972
- Administered by NOAA as a voluntary partnership between NOAA and states
- VA CZM established in 1986 as a network of state agencies and local governments





SUBAQUEOUS LANDS

Marine
Resources
Commission

DUNES
MRC &
Local Wetlands
Boards



WETLANDS
MRC, DEQ &
Local
Wetlands
Boards



SHORELINE
SANITATION
Dept. Health



Virginia Coastal Zone
MANAGEMENT PROGRAM

AIR POLLUTION

Dept.
Environmental
Quality



LEAD AGENCY

FISHERIES
DGIF & MRC

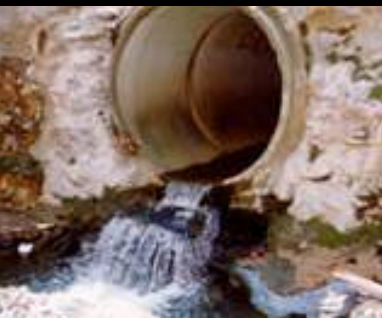


NONPOINT SOURCE WATER POLLUTION

DCR & Local Governments



POINT
SOURCE
WATER
POLLUTION
DEQ



COASTAL
LANDS
MANAGEMENT
Dept.
Conservation &
Recreation



A detailed map of Virginia illustrating its major waterways and county boundaries. The map is color-coded: land areas are yellow, water bodies are blue, and the state's outline is black. Major waterways are highlighted in blue and labeled with callouts: the York River, James River, Rappahannock River, North Landing River, and Northampton River. The Chesapeake Bay is a large blue area on the eastern coast. Numerous counties and cities are labeled, including Fairfax, Arlington, Alexandria, Prince William, Stafford, Fredericksburg, King George, Spotsylvania, Caroline, Essex, Westmoreland, Richmond, Northumberland, Lancaster, York, Gloucester, Middlesex, Stafford County, Shenandoah, Warren, Loudoun, Fauquier, Culpeper, Orange, Stafford, Albemarle, Amherst, Giles, Rappahannock, Accomack, Northampton, and Stafford. The map also shows the Potomac River to the north and the North Carolina border to the south. A small inset map in the top right corner shows the location of Virginia within the Eastern United States.

Executive Order

Signed by each new Governor to direct state agencies to attain

10 Goals of the VA CZM Program

Coastal Resource Protection

- 1) To protect and restore coastal habitats and species.
- 2) To restore and maintain the quality of all coastal waters.
- 3) To protect air quality.
- 4) To reduce or prevent losses of coastal habitat, life, and property.



Coastal Resource Sustainable Use

- 5) To provide for sustainable wild fisheries and aquaculture.
- 6) To promote sustainable ecotourism and to increase and improve public access.
- 7) To promote renewable energy production and provide for appropriate extraction of energy and mineral resources.



Coastal Management Coordination

8. To ensure sustainable development and support access for water-dependent development through effective coordination of governmental planning processes.
9. To avoid and minimize coastal resource use conflicts through research, planning, and a forum for coordination among agencies, interest groups, and citizens.
10. To promote informed decision-making by maximizing availability of up-to-date information, technical advice, and scientific data.



Benefits of a Federally Approved Coastal Zone Management Program

- Annual grant awards of about **\$2.7** million per year.
- Authority to require that all federal actions and activities affecting natural resources of Virginia's coastal zone be **consistent** with the enforceable policies of the CZM Program.

What Kinds of Things Does VA CZM Do with the Money?

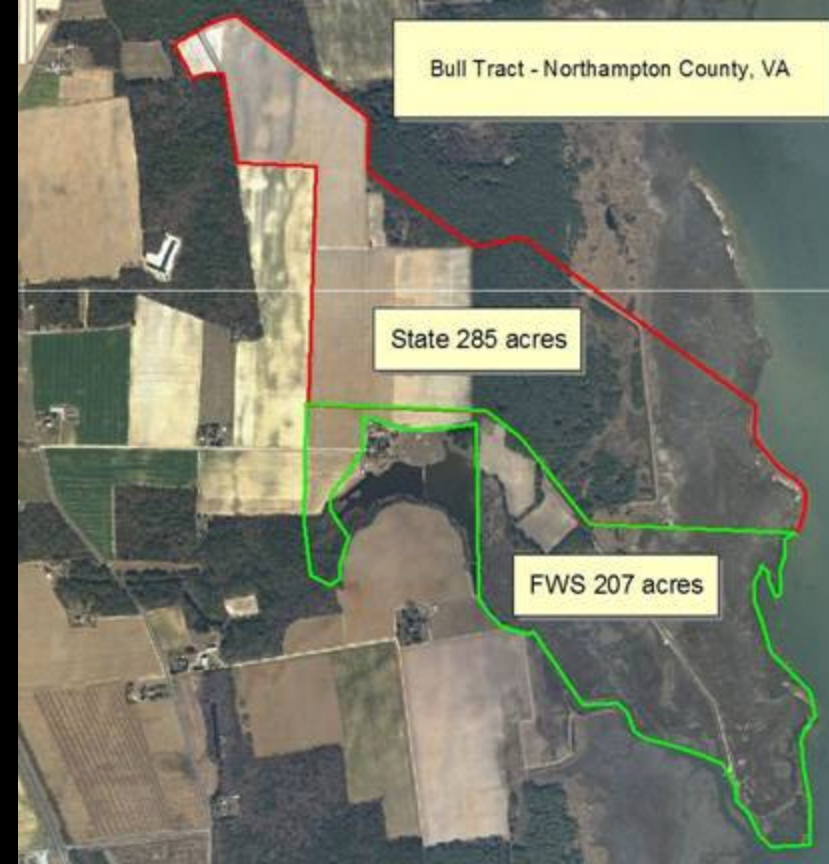
Core Program Implementation

- Fund staff salaries for implementation of core policies
- Continue ongoing activities such as mapping underwater grasses and providing technical assistance grants to coastal Planning District Commissions



Acquisition and Construction Projects

- Buy land
- Build public access
- Restore habitat



Fund "Focal Areas"

1999-2001

Oyster Heritage Program

\$1.5 Million

2002 -2008

Seaside Heritage Program

\$2.7 Million



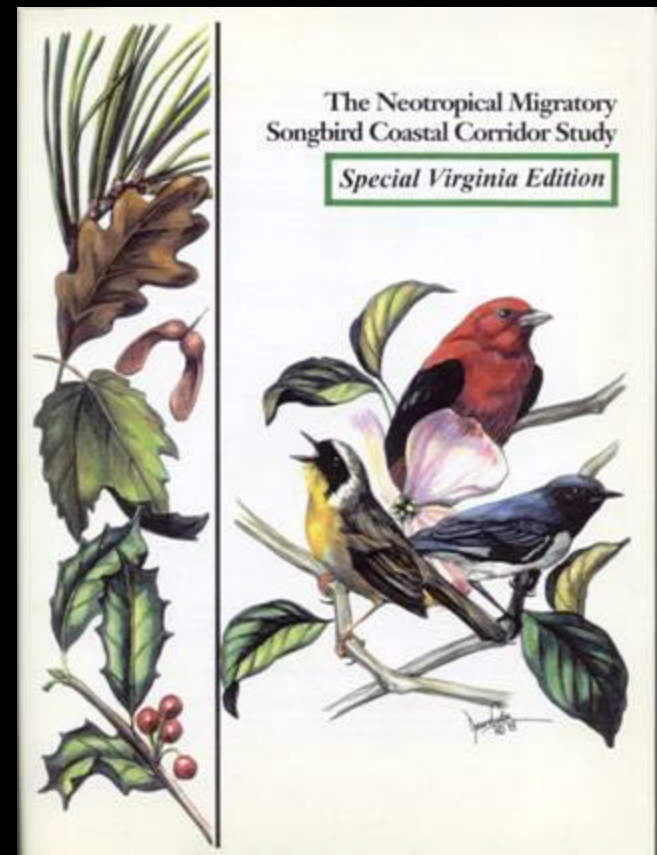
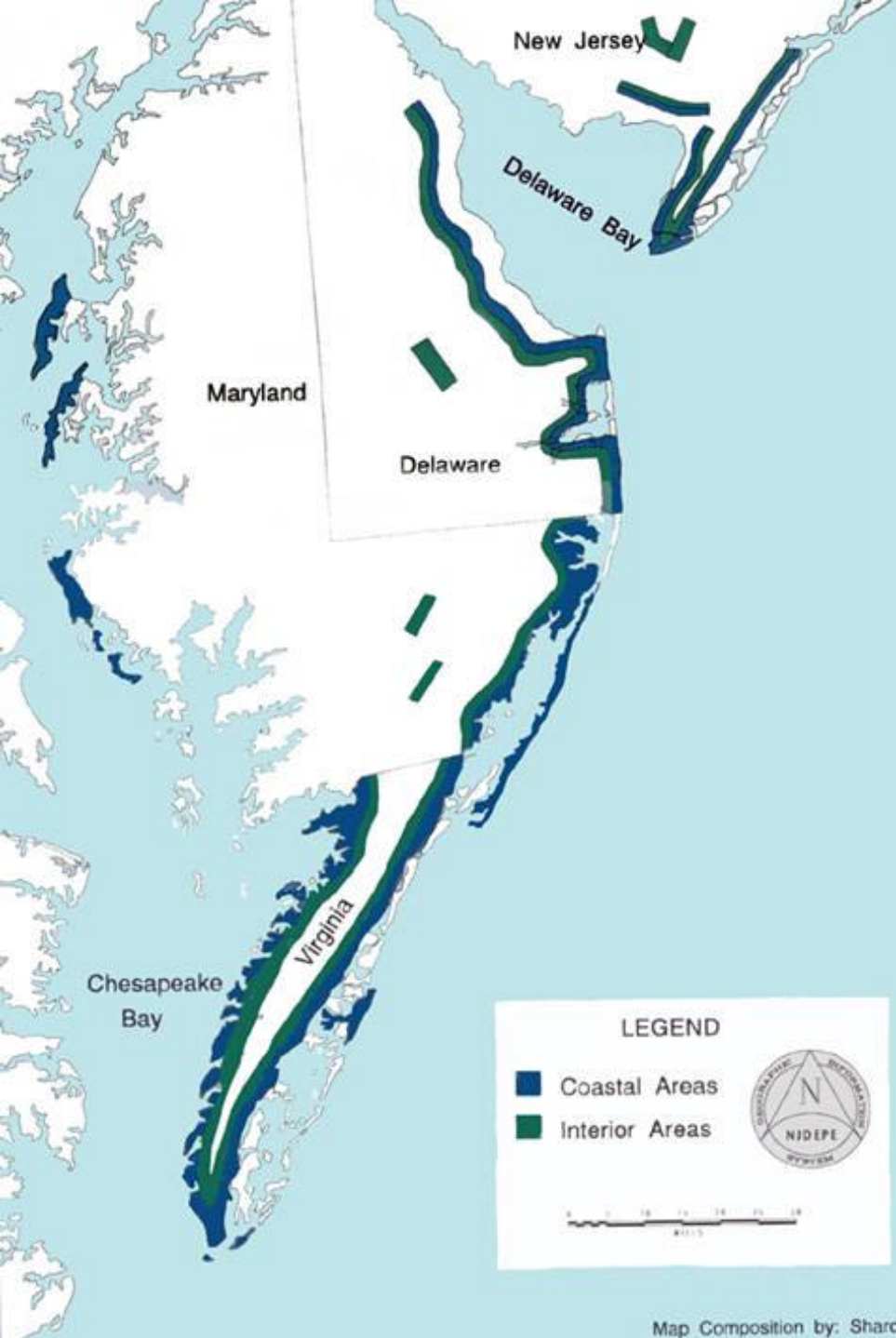
Develop New Enforceable Policies

- Improved Shellfish Aquaculture Policy
- Improved Shoreline Management & Living Shorelines
- Improved Decision-making through Coastal GEMS
- Seaside Special Area Management Plan



1991 Interstate Neotropical Migratory Songbird Study

\$165,000 CZM Investment



Northampton Special Area Management Plan 1992-2000

\$2 Million CZM Investment

- Developed policies to protect groundwater and habitat in sensitive areas
- Considered Tier 3 Waters designation



[illegible]

\$2.7 Million CZM Investment



The Seaside in the 1800's



A fine catch of fish, Wallop's Island, ca. 1900

T. L. COBB,
J. T. SPADY.

OPEN ALL THE YEAR

THE GRANDEST SURF-BATHING ON THE ATLANTIC COAST
BOATING, HUNTING, FISHING.
THE HUNTER'S PARADISE.

COBB'S ISLAND HOTEL,
COBB & SPADY, PROPRIETORS,
COBB'S ISLAND, NORTHAMPTON CO., VA.

TERMS:

Per Day.....	\$ 2.50
Per Week.....	12.00
Per Month.....	40.00

Children under twelve years old and Servants—Half Price.



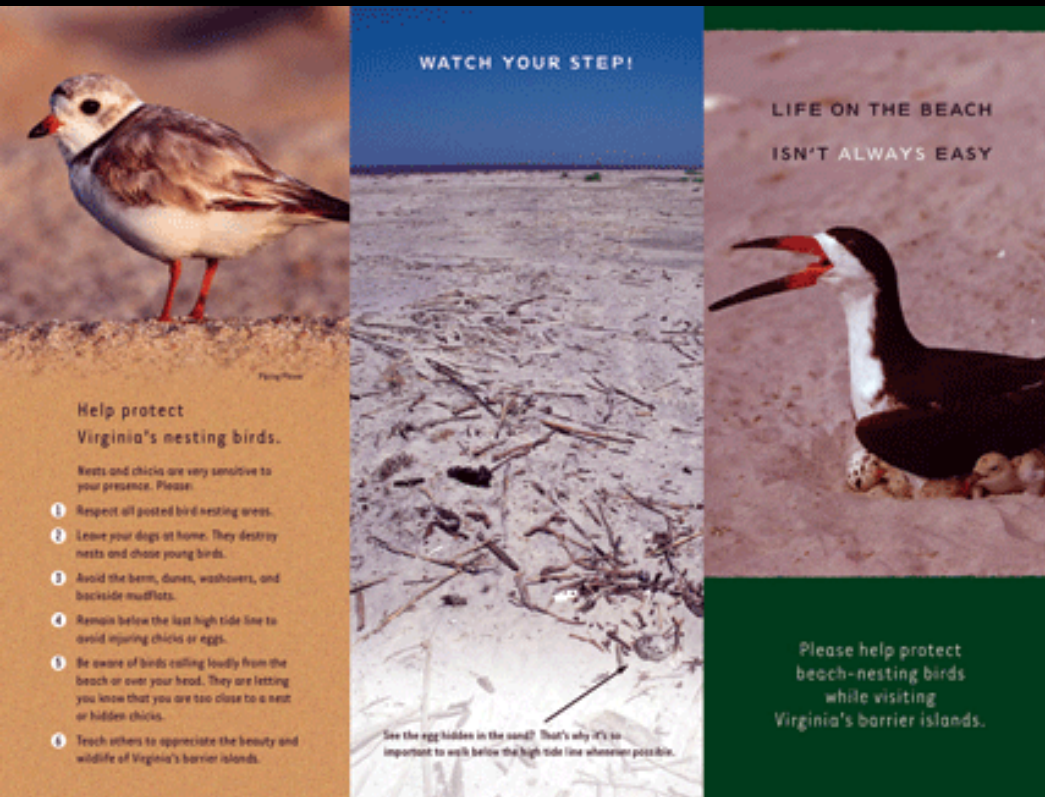
The Problem:

By the 1930's, hurricanes, eelgrass disease and over-harvesting wiped out the seaside's natural resources and ecotourism.



Despite major land conservation/acquisition efforts, system was not rebounding until ...

Seaside Heritage Program



...Bird Habitat Restoration

- \$303,936 to VMNH, W & M Center for Conservation Biology DGI F, TNC, USFWS
- control predators, conduct habitat suitability assessments, research clam farm and Phragmites impacts on birds,
- beach-nesting bird populations finally rebounding



...Marsh Habitat Restoration

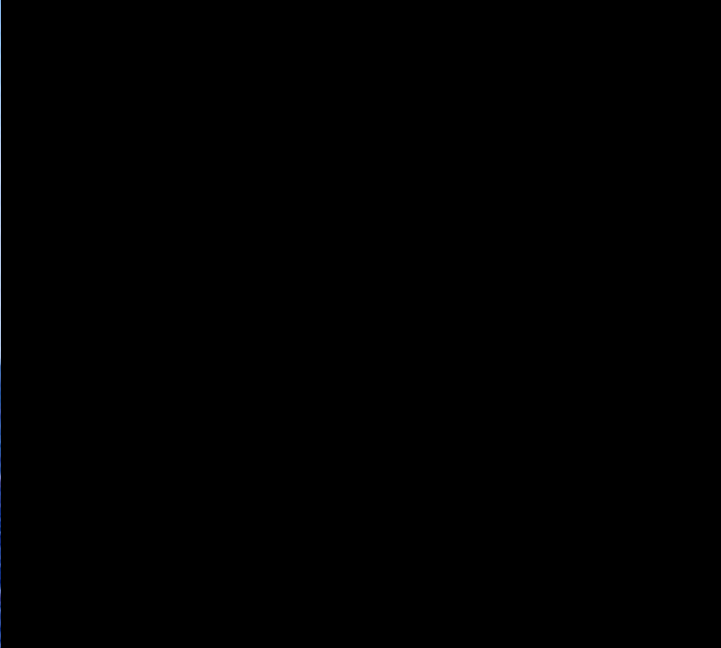
- \$324,231 to DCR
- mapped 2,000 acres Phrag
- removed 300+ acres of Phragmites
- 12+ community workshops





...Seagrass Restoration

- \$654,000 to VIMS
- planted eelgrass now occupying >360 acres
- could bay scallops return?

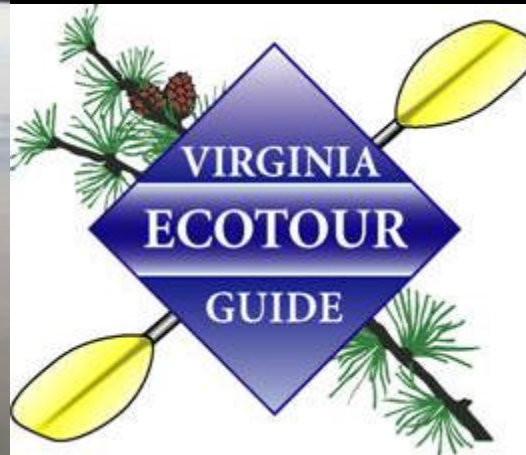


...Oyster Reef Restoration

- \$363,000 to VMRC to create ~14 acres
- \$140k to VIMS for oyster inventory by late 2008

Navigating the Virginia Seaside Water Trail

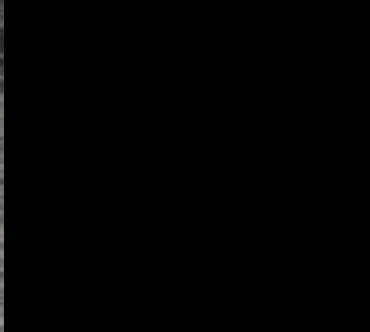
An Internet Guide to Paddling the Seaside of Virginia's Eastern Shore



...Ecotourism Improvements

- \$217,250 to AN PDC, DGI F, CZM, VIMS, ESCC
- seaside water trail
- 4 floating docks
- Willis Wharf observation deck
- interpretive signage
- guide certification courses





...Aquaculture Development

- Research on impacts, Best Management Practices guide; \$90k to CCB, VIMS



Shellfish Farming is Growing

Market Size Shellfish (seed sales also growing)	1995 Harvest	2003 Harvest	2005 Sales
Hard Clams	43,710,000 \$6.9 M (\$0.157/clam)	139,832,637 \$20.3M (\$0.145/clam)	178,000,000 \$26.7M (\$0.15/clam)
Oysters	259,000 \$62k (\$0.24/oyster)	859,209 \$213k (\$0.25/oyster)	2,837,800 \$823k (\$0.29/oyster)

Sources: VA Agricultural Statistics Service
VA Sea Grant Reporting Survey June 2006

Seaside Special Area Management Plan 2005-2010

\$330,000 CZM Investment

- FY 05 and 07: \$44k to UVA to develop Seaside Management Plan to protect seaside resources and have another \$30k to contract.
- FY 06: Develop Native Vegetation social marketing campaign (\$10k)
- FY 07: \$10k for CommunityViz DAWN Workshops – Public Forum in June and County staff training; \$10k for ARC/INFO training
- FY 08 – 10 \$75k/yr for seaside policy development





Aquaculture (Shellfish Farming) Policy 2006-2010

\$405,000 CZM Investment

- Clam & oyster aquaculture suitability and vulnerability models for E. Shore and Gloucester (contract to VIMS)
- Cost-benefit analysis of public & private ,clam & oyster farming (contract to Virginia Tech)
- Management options for increasing or better use of available subaqueous bottom (contract to VIMS)
- Policy options for local government ordinances to protect shellfish waters from detrimental land uses.
- Management options for state agencies for protecting water quality to support shellfish farming; e.g. DEQ effort to on Shellfish Enhancement Zones

New Focal Area: Sustainable Communities Planning FY 2008 – 2010 \$385,000 per year

Funds to Planning District Commissions for:

1. Climate Change (may include sea level rise, watershed issues, etc.)
2. Blue-Green Infrastructure Planning and Implementation (could include shellfish aquaculture issues, recreational issues and use conflicts)
3. Conservation Corridor Planning and Implementation
4. Alternative Septic System Impacts



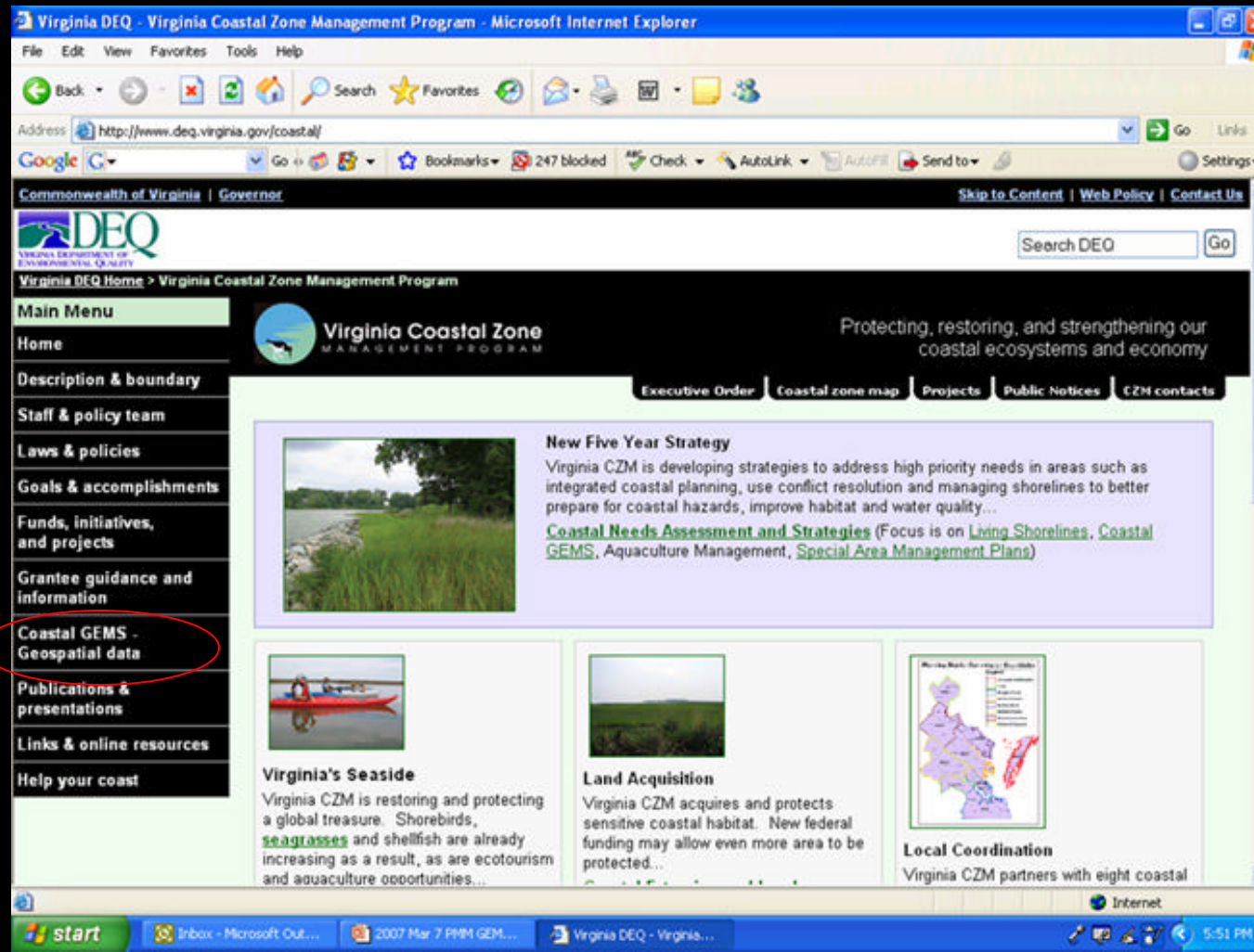
Coastal GEMS

Geospatial & Educational Mapping System

2006-2010

\$418,000 CZM Investment

- Online maps of land and water “gems” or “blue & green infrastructure”
- Integrating land and water use policies to ensure maximum protection



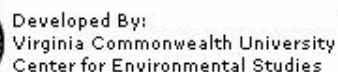


Results

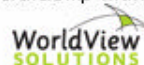
Map Layers

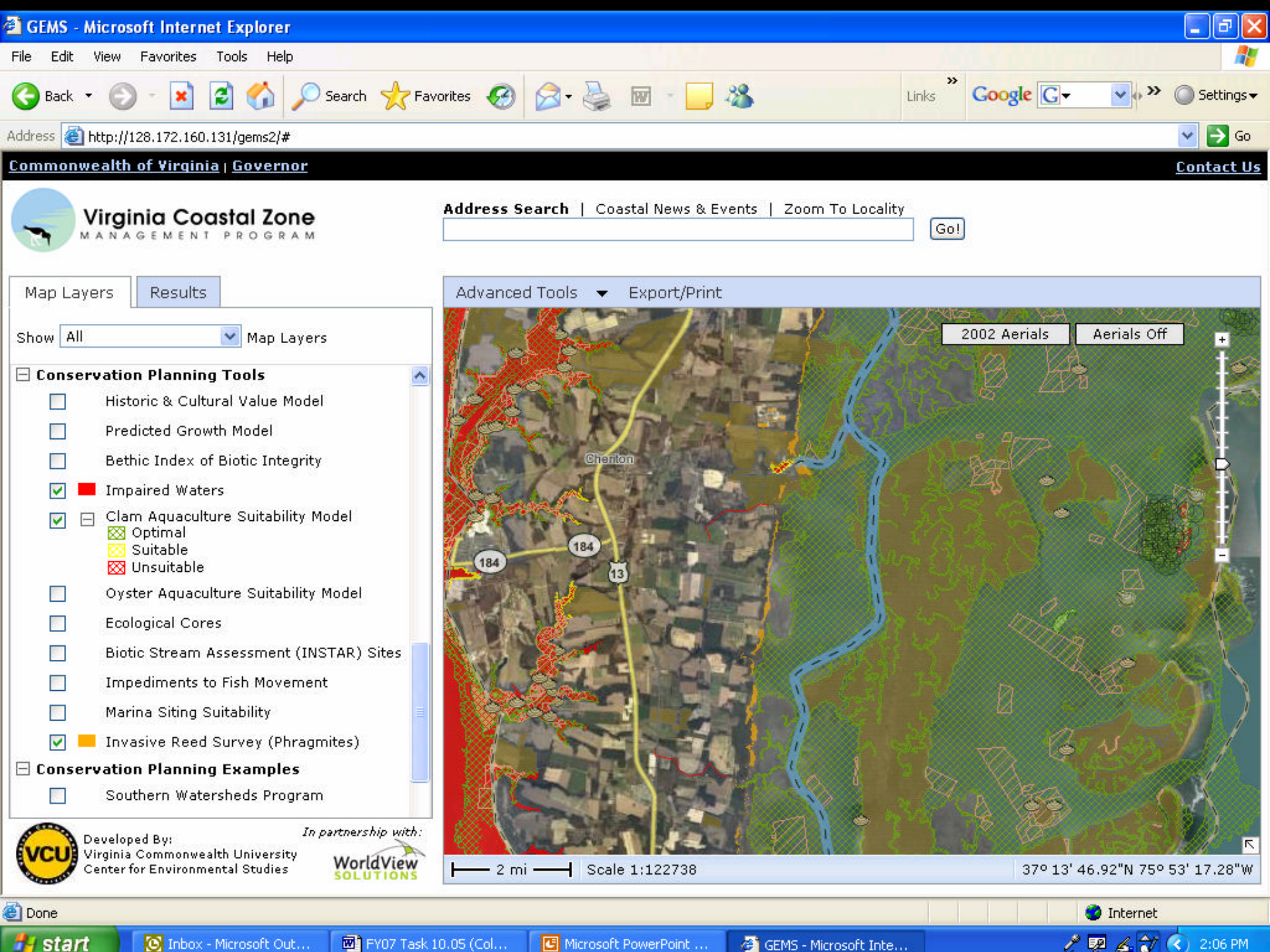
Advanced Tools ▼ Export/Print

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In partnership with:







Fact Sheet

Conservation Lands

This dataset contains the boundaries and attributes for public and certain private lands in Virginia that have potential significance for serving a variety of conservation and recreation roles. This dataset includes lands conserved and managed by The Nature Conservancy and the Virginia Outdoors Foundation. The full dataset shown in Coastal GEMS may not be available for download. Contact the VA Department of Conservation and Recreation for more information regarding this dataset.

Status of the data

This project began in 1999. The data is current as of July 2007 and is updated regularly as needed.

Data Source

Conservation Lands Database (2007). Virginia Department of Conservation and Recreation, Division of Natural Heritage.

To access this data layer/tool directly, please visit:

<http://www.dcr.state.va.us/dnh/conslandindex.htm>

Why should we care?

Kiptopeke State Park. Photo by Virginia Witmer, courtesy of Virginia CZM Program.

For original datasets, please contact:

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Fax: (804) 371-2674
Email: david.boyd@dcr.virginia.gov

Map Layers Results

Show

☒ Shoreline Features

- ☐ Beaches Above High Tide
- ☐ Chesapeake Bay National Wetlands
- ☐ Restored Riparian Areas

☒ Land Features

- ☐ Forest Cover
- ☒ Conservation Lands
- ☐ Barrier Island Overwash

☒ Wildlife

- ☐ Essential Wildlife
- ☐ Important Bird Areas
- ☐ Migratory Songbirds

☒ Recreational Features

- ☐ VDGIF Boat Ramps
- ☐ Scenic Rivers



Developed By:
Virginia Commonwealth University
Center for Environmental Studies

In partnership with:



2 mi Scale 1:122738

37° 56' 12.51"N 75° 37' 42.38"W

Questions?



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